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Appeal Brief

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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Examiner: Darren Schwartz

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**APPEAL BRIEF**

Appellant appeals the status of Claims 1, 3, 5 – 11 and 13 as presented in response to the final Office Action dated January 22, 2009 and the Advisory Action dated March 26, 2009, and submits this Appeal Brief.

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**1. Real Party in Interest**

The real party in interest is Koninklijke Philips Electronics N. V., the assignee of the entire right, title and interest in and to the subject application by virtue of an assignment recorded with the Patent Office on January 21, 2005 at Reel/Frame 016724/0977.

**2. Related Appeals and Interferences**

None.

**3. Status of Claims**

- a) Claims 1, 3, 5 – 11 and 13 are pending. Claims 1, 8 and 11 are independent.
- b) Claims 2, 4 and 12 are cancelled without prejudice.
- c) Claims 1, 3, 5 – 11 and 13 stand rejected and are under appeal.

**4. Status of Amendments**

An amendment under 37 C.F.R. § 1.111, mailed to the PTO on August 1, 2008, in response to a non-final Office Action dated May 1, 2008, was entered. A response under 37 C.F.R. § 1.111 was filed on December 31, 2009 in response to a non-final Office Action dated October 1, 2008. In the December 31, 2009 response, none of the pending claims were amended. A response under 37 C.F.R. § 1.116 was filed on March 18, 2009 in response to a final Office Action dated January 22, 2009. In the March 18, 2009 response, none of the pending claims were amended, and the response was entered for purposes of appeal according to the Advisory Action dated March 26, 2009. No other responses/amendments were filed subsequent to the March 18, 2009 response. The claims listed in section 8 “Claims Appendix” of this Appeal Brief

correspond to the claims submitted in Appellant's response of August 1, 2008.

**5. Summary of Claimed Subject Matter<sup>1</sup>**

The claimed invention, as recited in claim 1, is directed to a method for a first communication device to performing authenticated distance measurement between said first communication device and a second communication device, wherein the first and the second communication device share a common secret (page 8, lines 18 – 21) and; wherein the authenticated distance measurement comprises: transmitting a first signal from the first communication device to the second communication device at a first time t1 (page 8, lines 21 – 22), said second communication device being adapted for receiving said first signal, generating a second signal by modifying the received first signal according to the common secret, and transmitting the second signal to the first communication device (page 8, lines 22 – 25); receiving the second signal at a second time t2 (page 8, lines 25 – 26); generating by the first communication device a third signal by modifying the first signal according to the common secret; comparing the third signal with the received second signal to check if the second signal has been modified according to the common secret (page 8, lines 26 – 29); and determining the

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<sup>1</sup> It should be explicitly noted that it is not the Appellant's intention that the currently claimed or described embodiments be limited to operation within the illustrative embodiments described below beyond what is required by the claim language. Further description of the illustrative embodiments are provided indicating portions of the claims which cover the illustrative embodiments merely for compliance with requirements of this appeal without intending to read any further interpreted limitations into the claims as presented.

distance between the first and the second communication device according to a time difference between  $t_1$  and  $t_2$  (page 9, lines 2 – 7).

The claimed invention, as recited in claim 6, is directed to a method of claim 1, wherein the common secret has been shared before performing the distance measurement (page 4, lines 9 – 10), the sharing comprises: performing an authentication check from the first communication device on the second communication device, by checking whether said second communication device is compliant with a set of predefined compliance rules (page 4, lines 11 – 13), if the second communication device is compliant, sharing said common secret by transmitting said secret to the second communication device (page 4, lines 14 – 15).

The claimed invention, as recited in claim 8, is directed to a method of determining whether data stored on a first communication device are to be accessed by a second communication device, the method comprising performing an authenticated distance measurement between a third communication device and the second communication device, wherein the third and the second communication device share a common secret (page 5, lines 3 – 6), and wherein the authenticated distance measurement comprises: transmitting a first signal from the third communication device to the second communication device at a first time  $t_1$  (page 8, lines 21 – 22), said second communication device being adapted for receiving said first signal, generating a second signal by modifying the received first signal according to the common secret, and transmitting the second signal to the third device (page 8, lines 22 – 25); receiving the second signal at a second time  $t_2$ ; generating by the third communication device a third signal by modifying the first signal according to the common secret; comparing the third signal with the received second signal to check if the second signal has been modified according to the common

secret (page 8, lines 26 – 29); and determining the distance between the third and the second communication device according to a time difference between  $t_1$  and  $t_2$  (page 9, lines 2 – 7); and checking whether said measured distance is within a predefined distance interval (page 5, lines 7 – 8).

The claimed invention, as recited in claim 11, is directed to a communication device for performing authenticated distance measurement to a second communication device, where the communication device shares a common secret with the second communication device and where the communication device comprises means for measuring the distance to the second device using said common secret (page 8, lines 18 – 21); wherein the device comprises: means for transmitting a first signal to a second communication device at a first time  $t_1$  (page 8, lines 21 – 22), said second communication device being adapted for receiving said first signal, generating a second signal by modifying the received first signal according to the common secret and transmitting the second signal (page 8, lines 22 – 25); means for receiving the second signal at a second time  $t_2$ ; means for generating by the first communication device a third signal by modifying the first signal according to the common secret; means for comparing the third signal with the received second signal to check if the second signal has been modified according to the common secret (page 8, lines 26 – 29), means for determining the distance between the first and the second communication device according to a time difference between  $t_1$  and  $t_2$  (page 9, lines 2 – 7).

## **6. Grounds of Rejection to be Reviewed on Appeal**

A. Whether claims 1, 5 – 11 and 13 are properly rejected under 35 U.S.C. §103(a)

over Lundkvist (WO 02/035036 A1), in view of Blumenau et al., (U.S. Pat 6,493,825 B1),  
hereinafter Blumenau.

B. Whether claim 3 is properly rejected under 35 U.S.C. §103(a) over Lundkvist in  
view of Blumenau, in further view of Rofheart et al. (WO 01/93434 A2), hereinafter referred to  
as Rofheart.

## 7. **Argument**

Appellant respectfully traverses the rejections in accordance with the detailed arguments  
set forth below.

A. **Claims 1, 5 – 11 and 13 are not properly rejected under 35 U.S.C. §103(a)  
over Lundkvist, in view of Blumenau.**

### **1. Claim 1**

Claim 1 recites:

*“A method for a first communication device to performing  
authenticated distance measurement between said first communication  
device and a second communication device, wherein the first and the  
second communication device share a common secret and;  
wherein the authenticated distance measurement comprises:  
transmitting a first signal from the first communication device to  
the second communication device at a first time t1, said second  
communication device being adapted for  
receiving said first signal,  
generating a second signal by modifying the received first signal  
according to the common secret, and*

*transmitting the second signal to the first communication device;*  
*receiving the second signal at a second time  $t_2$ ;*  
*generating by the first communication device a third signal by*  
*modifying the first signal according to the common secret;*  
*comparing the third signal with the received second signal to*  
*check if the second signal has been modified according to the common*  
*secret.”* (Emphases added)

Therefore, the claimed invention requires that the first communication device transmits the first signal and generates the third signal; and that the second communication device generates and transmits the second signal.

In the Advisory Action, the Examiner alleged that Appellant's arguments are inconsistent with the prior Office Action. Appellant respectfully disagrees with such allegation. As discussed below, Appellant submits that according to the identities of the communication devices as interpreted by the Examiner, the arguments made by the Examiner are inconsistent. As detailed below the Examiner points to the vehicle in Lundkvist as the first communication device and the SUBSYSTEM PORT ADAPTER in Blumenau as sending the third signal, however the claims recite that the third signal comes from the first device. However, the STORAGE SUBSYSTEM PORT ADAPTER in Blumenau can not be identified as the first communication device sending the third signal. Given this inconsistency Appellants have done their best to interpret the Office Action and Advisory Action, and present arguments addressing the interpretations and the corresponding arguments made by the Examiner in the prior Office Action and Advisory Action.

In the Office Action, page 5, the Examiner interpreted, in Fig. 1 of Lundkvist, the vehicle, element 1, as the first communication device, and the portable unit, element 2, as the second



communication device. Therefore, according to the Examiner's interpretation, in Lundkvist, the vehicle is the first communication device that transmits the first signal and generates the third signal; and the portable unit is the second communication device that generates and transmits the second signal.

As we best understand the Office Action, for example page 6, lines 13 – 14, the Examiner interpreted the STORAGE SUBSYSTEM PORT ADAPTER in Blumenau as the first communication device in the claimed invention. Appellant respectfully traverses such interpretation. Blumenau, column 37, lines 46 – 47 and Fig. 33, element 381, clearly shows that the first signal sent is element 381 and that it is the HOST CONTROLLER that sends the request 381 in the first step of the process. Since both Appellant's claimed invention and the vehicle in Lundkvist identified by the Examiner as the first communication device (as we best understand the examiner's position) require that the first communication device sends the first signal, consistency requires that the HOST CONTROLLER in Blumenau be identified with the first communication device, because it is the HOST CONTROLLER that sends the first signal. Thus the STORAGE SUBSYSTEM PORT ADAPTER cannot be identified as the first communication device. Since the HOST CONTROLLER (allegedly the first communication device according to the Office Action) in Blumenau does not generate a third signal by modifying the first signal according to the common secret, or compare the third signal with the received second signal to check if the second signal has been modified according to the common secret, thus Blumenau also fails to disclose the above claimed features.

In the Office Action, pages 2 – 3, the Examiner argued that even though the first and second communication devices are inconsistent between Lundkvist and Blumenau, the combined

teachings from the references would have suggested to those of ordinary skill in the art the claimed invention. Appellant respectfully disagrees.

According to MPEP 2143.01, Section VI: *“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.”*

Appellant submits that combining Lundkvist and Blumenau would change the principle of operation of Lundkvist and Blumenau. Lundkvist discloses that it is the first communication system that sends the first signal X in order to perform the distance measurement (Lundkvist, Fig. 2 and page 8, lines 24 – 26). As discussed above, the Office Action alleged that the STORAGE SUBSYSTEM PORT ADAPTER in Blumenau is the first communication device. However, the STORAGE SUBSYSTEM PORT ADAPTER in Blumenau is the one that sends the second signal, not the first signal. Blumenau, column 37, lines 46 – 47 and Fig. 33, element 381, clearly shows that it is the HOST CONTROLLER that sends a request in the first step of the process. Since the HOST CONTROLLER sends the first signal, consistency would lead one ordinarily skilled in the art to consider the HOST CONTROLLER be identified with the first communication device as claimed, while the STORAGE SUBSYSTEM PORT ADAPTER would be considered to be identified with the second communication device. Appellant submits that the roles of the first and second communication devices are very different and are not interchangeable, because the first communication device is the device initiates the first signal transmission and the second communication is device is the device that responds to the first signal transmission. Since the roles and identities of the first and second communication devices are inconsistent between Lundkvist and Blumenau, combining the teaching of Blumenau to that

of Lundkvist would require a substantial reconstruction and redesign of the elements shown in Lundkvist as well as a change in the basic principle under which the Lundkvist construction was designed to operate.

In the Advisory Action, the Examiner interpreted Appellant's arguments in the March 18, 2009 response as recognizing that the switching roles of communication devices appears to naturally flow from Lundkvist and Blumenau. Appellant strongly disagrees and traverses such characterization of Appellant's arguments. On the contrary, Appellant's arguments set forth the reasons why the switching of the roles of the communication devices does not flow naturally from Lundkvist and Blumenau, and therefore it is not obvious to combine the teachings of Lundkvist and Blumenau. Since the communication devices in Lundkvist and Blumenau are inconsistent, a role switching must be done in order to combine Lundkvist and Blumenau. However, nothing in Lundkvist teaches or suggests that the roles of the vehicle and the portable unit are interchangeable; and nothing in Blumenau teaches or suggest that the STORAGE SUBSYSTEM PORT ADAPTER and the HOST CONTROLLER are interchangeable. Therefore, it is not obvious to combine them, because the communication devices serve different purposes and are not interchangeable. For argument sake, Appellant submits that even if the teaching of Blumenau was forced into Lundkvist, not only must the roles of the communication devices be reversed, but also the transmission of the first signal must be discarded. Discarding the first signal clearly changes the fundamental design of the operations, and there is no teaching or suggestion in Lundkvist or Blumenau to discard the first transmission. Therefore, when combining Lundkvist and Blumenau, it would require a substantial reconstruction and redesign of the elements shown in Lundkvist and Blumenau as well as a change in the basic principle

under which the Lundkvist and Blumenau constructions were designed to operate.

In view of at least the foregoing, Appellant submits that the combination of Lundkvist and Blumenau does not teach or suggest each and every claimed element, that there is no reason to combine Lundkvist and Blumenau, and that even if Lundkvist was forced to combine with Blumenau, such combination would be inoperable. Thus, it is not obvious for a person ordinarily skilled in the art to combine Lundkvist and Blumenau to arrive at the claimed invention without the benefit of the impermissible hindsight. Therefore, claim 1 is patentable over Lundkvist and Blumenau, and the rejection of claim 1 should be reversed.

## **2. Claim 11**

Similarly, independent claim 11, in part, requires:

*“means for transmitting a first signal to a second communication device at a first time  $t_1$ , said second communication device being adapted for receiving said first signal, generating a second signal by modifying the received first signal according to the common secret and transmitting the second signal;  
means for receiving the second signal at a second time  $t_2$ ;  
means for generating by the first communication device a third signal by modifying the first signal according to the common secret.”*

Since independent claim 11 contains many similar distinguishing features as in claim 1. Appellant essentially repeats the above arguments for claim 1 and applies them to claim 11 pointing out why the combination of Lundkvist and Blumenau fails to teach or suggest the above claimed features. Therefore, claim 11 is patentable over Lundkvist and Blumenau, and the rejection of claim 11 should be reversed.

### **3. Claim 8**

Independent claim 8, in part, requires:

*“transmitting a first signal from the third communication device to the second communication device at a first time t1, said second communication device being adapted for  
receiving said first signal,  
generating a second signal by modifying the received first signal according to the common secret, and  
transmitting the second signal to the third device;  
receiving the second signal at a second time t2;  
generating by the third communication device a third signal by modifying the first signal according to the common secret.”*

Since independent claim 8 contains many similar distinguishing features as in claim 1, with the third communication device being the device that transmits the first signal and generates the third signal. Appellant essentially repeats the above arguments for claim 1 and applies them to claim 8 pointing out why the combination of Lundkvist and Blumenau fails to teach or suggest the above claimed features. Therefore, claim 8 is patentable over Lundkvist and Blumenau, and the rejection of claim 8 should be reversed.

### **4. Claims 5 – 7, 9, 10 and 13**

Claims 5 – 7, 9, 10 and 13 respectively depend from claims 1, 8 and 11, and inherit all the respective features of claims 1, 8 and 11. Thus, claims 5 – 7, 9, 10 and 13 are patentable for at least the reasons discussed above with respect to each independent claim from which they

depend, with each dependent claim containing further distinguishing features. Therefore, the rejection of claims 5 – 7, 9, 10 and 13 should be reverse.

With respect to claim 6, there is also no showing in the Office Action that Lundkvist or Blumenau teaches the claimed feature of “*performing an authentication check from the first communication device on the second communication device, by checking whether said second communication device is compliant with a set of predefined compliance rules.*” The E\_SVAR = f(O\_RND) in Lundkvist, page 8, lines 27 – 28, is just a message part of the f(x) for unlocking the vehicle. However, such message part is not a compliance rule. Thus, for this additional reason, claim 6 is patentable over Lundkvist and Blumenau.

**B. Claim 3 is not properly rejected under 35 U.S.C. §103(a) over Lundkvist in view of Blumenau, in further view of Rofheart.**

Appellant submits that Rofheart does not in any way cure the defects pointed out above with respect to Lundkvist and Blumenau with respect to claim 1 above. Claim 3 depends from claim 1 and inherits all the features of claim 1. Thus claim 3 is patentable for at least the same reasons discussed above with respect to claim 1, from which it depends, and with further distinguishing features. Therefore, the rejection of claim 3 should be reversed.

### **Conclusion**

As discussed above, none of the cited references, either taken singly or in combination, teach or suggest all of the claim limitations of the pending claims; and there is no reason to combine the references, and even if they were combined, such combination would be inoperable.

Accordingly, it is respectfully requested that the Board reverse the rejection of claims 1, 3, 5 – 11 and 13 under 35 U.S.C. §103(a).

Respectfully submitted,

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**8. CLAIMS APPENDIX**

1. (Previously presented) A method for a first communication device to performing authenticated distance measurement between said first communication device and a second communication device, wherein the first and the second communication device share a common secret and;

wherein the authenticated distance measurement comprises:

transmitting a first signal from the first communication device to the second communication device at a first time  $t_1$ , said second communication device being adapted for receiving said first signal,

generating a second signal by modifying the received first signal according to the common secret, and

transmitting the second signal to the first communication device;

receiving the second signal at a second time  $t_2$ ;

generating by the first communication device a third signal by modifying the first signal according to the common secret;

comparing the third signal with the received second signal to check if the second signal has been modified according to the common secret; and

determining the distance between the first and the second communication device according to a time difference between  $t_1$  and  $t_2$ .

2. (Cancelled)



3. (Previously presented) A method according to claim 1, wherein the first signal is a spread spectrum signal.

4. (Cancelled)

5. (Previously presented) A method according to any of the claims 1, wherein the first signal and the common secret are bit words and where the second signal comprises information being generated by performing an XOR between the bit words.

6. (Previously presented) A method according to any of the claims 1, wherein the common secret has been shared before performing the distance measurement, the sharing comprises:

performing an authentication check from the first communication device on the second communication device, by checking whether said second communication device is compliant with a set of predefined compliance rules,

if the second communication device is compliant, sharing said common secret by transmitting said secret to the second communication device.

7. (Original) A method according to claim 6, wherein the authentication check further comprises checking if the identification of the second device is compliant with an expected identification.

8. (Previously presented) A method of determining whether data stored on a first communication device are to be accessed by a second communication device, the method comprising

performing an authenticated distance measurement between a third communication device and the second communication device, wherein the third and the second communication device share a common secret, and

wherein the authenticated distance measurement comprises:

transmitting a first signal from the third communication device to the second communication device at a first time  $t_1$ , said second communication device being adapted for receiving said first signal,

generating a second signal by modifying the received first signal according to the common secret, and

transmitting the second signal to the third device;

receiving the second signal at a second time  $t_2$ ;

generating by the third communication device a third signal by modifying the first signal according to the common secret;

comparing the third signal with the received second signal to check if the second signal has been modified according to the common secret; and

determining the distance between the third and the second communication device according to a time difference between  $t_1$  and  $t_2$ ; and

checking whether said measured distance is within a predefined distance interval.

9. (Original) A method according to claim 8, wherein the data stored on the first device are sent to the second device if it is determined that the data stored on the first device are to be accessed by the second device.

10. (Previously presented) A method according to claim 8, wherein the first communication device comprises the third communication device.

11. (Previously presented) A communication device for performing authenticated distance measurement to a second communication device, where the communication device shares a common secret with the second communication device and where the communication device comprises means for measuring the distance to the second device using said common secret; wherein the device comprises:

means for transmitting a first signal to a second communication device at a first time  $t_1$ , said second communication device being adapted for receiving said first signal, generating a second signal by modifying the received first signal according to the common secret and transmitting the second signal;

means for receiving the second signal at a second time  $t_2$ ;

means for generating by the first communication device a third signal by modifying the first signal according to the common secret;

means for comparing the third signal with the received second signal to check if the second signal has been modified according to the common secret,

means for determining the distance between the first and the second communication device according to a time difference between  $t_1$  and  $t_2$ .

12. (Cancelled)

13. (Previously presented) The communication device according to claim 11, further comprising means for playing back multimedia content based on a result of the authenticated distance measurement.

**9. RELATED EVIDENCE APPENDIX**

No evidence has been submitted pursuant to §§ 1.130, 1.131, or 1.132 of this title nor any other evidence entered by the examiner and relied upon by Appellant in the appeal.

**10. RELATED PROCEEDINGS APPENDIX**

Appellant is not aware of any appeals or interferences related to the present application.